

# VOLVO PENTA INBOARD DIESEL

# TAMD165A

6-cylinder, 4-stroke, direct-injected, turbocharged marine diesel engine with aftercooler – crankshaft power\* 404–441 kW (550–600 hp)

\* Power rating – see Technical Data

## Powerful and reliable engine for demanding operation in commercial applications

TAMD165A is the latest version of the proven 16-liter engine. A great number of items have been improved, resulting in entirely new levels of quality, power and low emissions. The engine is specially developed for displacement craft in Heavy Duty (Rating 1) and Medium Duty (Rating 2) operation and suitable for workboat applications thanks to high torque across a wide speed range.

TAMD165A has effective aftercooling and turbocharging including a new turbocharger with higher efficiency for more power. The engine fulfils extremely high demands on operational reliability and service life. The engine is also designed for long periods of low load idling.

## Durability and low sound levels

The Volvo Penta in-line six cylinder engine is a well-balanced unit. The reinforced cylinder block, cylinder heads, pistons and piston rings, intake and exhaust valves give increased rigidity and stability. All improvements lead to minimized oil consumption and longer service life.

Twin vibration dampers reduce the crankshaft torsional tension and contribute to the vibrationfree operation and very low sound levels. New, freshwater-cooled, oil cooler and heat exchanger with high capacity to maintain low oil temperature, also with increased margin against contaminated water.

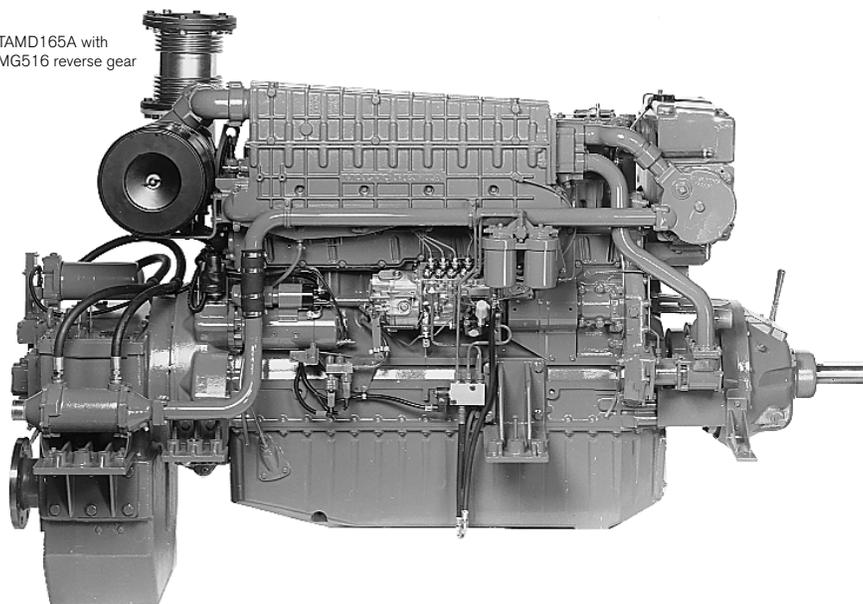
## Low exhaust emission levels

Carefully balanced, new combustion and fuel systems for maximum power, minimum noxious emissions and low fuel consumption. This also results in good cold starting and load acceptance characteristics. The engine is certified according to River Rhine emission regulations and complies with MARPOL 73/78 Annex VI (IMO NOx Techn. code) and the US/EPA 2004 Marine Commercial regulation.

## Marine electrics

New electrical system incorporating electromagnetic shut-off valve for immediate engine shutdown, for increased reliability. The electrical

TAMD165A with MG516 reverse gear



system is specially adapted to demanding marine environments with moisture-proof connectors and flex-mounted terminal box and senders.

## Ease of service and maintenance

Large oil volumes and easily accessible service and maintenance points contribute to ease of service and low running costs.

## Comprehensive service network

Volvo Penta has a well-established network of authorized service dealers in more than 100 countries throughout the world. These service centers offer Genuine Volvo Penta Parts as well as skilled personnel to ensure the best possible service.

## Technical description:

### Engine and block

- Reinforced cylinder block dimensioned for high output and low sound level. Cylinder block and the new improved cylinder heads of special alloy cast iron.
- Separate cylinder heads. Gasketless sealing design ensures high reliability against gas and coolant leakage.
- Replaceable cylinder liners and valve seats/guides. Four valves per cylinder and a centrally located injector provide effective combustion leading to lower fuel consumption.
- New improved aluminum pistons with uplifted piston rings of Keystone type. With effective piston cooling for minimum carbon deposits and increased piston and liner service life.
- Trapeze-shaped connecting rods with large

bearings for lower tension.

- Tough, high located, seven bearing camshaft of special steel. Short stiff push rods, strong valve springs resulting in a very stable and durable valve system. Roller cam followers for minimum friction and easy service.
- Seven-bearing nitrocarburized rigid crankshaft with generously dimensioned bearing surfaces for low bearing load.

### Lubrication system

- Oil sump with inspection covers
- Twin oil filter of spin-on type, plus by-pass filter
- Freshwater-cooled oil cooler

### Fuel system

- Fuel injection pump with centrifugal governor, smoke limiter and fuel feed pump
- Seven-hole injectors
- Fuel shut-off valve 24V, electrically operated
- Twin fine fuel filters of spin-on type

### Turbocharger

- Freshwater-cooled turbocharger and exhaust manifold

### Cooling system

- Seawater-cooled aftercooler
- Tubular heat exchanger or 2-circuit keel cooling
- Cooling pipes in copper/nickel give greater resistance to corrosion and longer service life
- Freshwater filter incl. corrosion protection
- Gear-driven freshwater pump

### Electrical system

- 24V electrical system incl. 60A alternator with integrated charging sensor
- Rubber-suspended electrical terminal box

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## Technical Data

Engine designation ..... **TAMD165A**  
 No. of cylinders and configuration ..... in-line 6  
 Method of operation ..... 4-stroke, direct-injected, turbocharged diesel engine with aftercooler  
 Bore, mm (in.) ..... 144 (5.67)  
 Stroke, mm (in.) ..... 165 (6.5)  
 Displacement, l (in<sup>3</sup>) ..... 16.12 (983.7)  
 Compression ratio ..... 17:1  
 Dry weight, kg (lb) ..... 1765 (3891)  
 Crankshaft power,  
 Rating 2, kW (hp) 1800 rpm ..... 441 (600)  
 Rating 1, kW (hp) 1800 rpm ..... 404 (550)  
 Torque,  
 Rating 2, Nm (lbf.ft) 1800 rpm ..... 2340 (1726)  
 Rating 1, Nm (lbf.ft) 1800 rpm ..... 2143 (1581)  
 Recommended fuel to conform to ..... ASTM-D975 1-D & 2-D, EN 590 or JIS KK 2204  
 Specific fuel consumption,  
 Rating 2, g/kWh (lb/hph) 1800 rpm ..... 214 (0.347)  
 Rating 1, g/kWh (lb/hph) 1800 rpm ..... 212 (0.343)  
 Fuel temperature 40°C (104°F).

Technical data according to ISO 3046 Fuel Stop Power and ISO 8665. With fuel having an LHV of 42700 kJ/kg and density of 840 g/liter at 15°C (60°F). Merchant fuel may differ from this specification which will influence engine power output and fuel consumption.

The engine is certified according to River Rhine emission regulations and complies with MARPOL 73/78 Annex VI (IMO NOx Techn. code) and the US/EPA 2004 Marine Commercial regulation.

N.B. The product can also be used in an application with a higher rating than stated, e.g. R2 can be used for R3, R4 or R5.

## Optional equipment:

### Engine

- Adapter kit for flywheel and flywheel housing acc. to SAE 0
- Flexible suspension for engine and reverse gear

### Lubrication system

- Manual oil drain pump, engine-mounted
- Extra oil dipstick
- Shallow oil sump
- Twin oil filter with shift valve

### Fuel system

- Shift valve for fuel filter
- Twin fuel filter/water separator with shift valve
- Jacketed fuel pipes

### Exhaust system

- Exhaust elbow, dry or wet 8"
- Silencer, dry
- Flexible compensator, dry

### Cooling system

- Seawater strainer
- Adapter for connection of extra expansion tank

### Electrical system

- 24V/60A or 100A extra alternator
- Various instrument panels
- Cable harness in different lengths
- Classifiable electrical equipment acc. to IP44

### Power transmission

- PTO 11.5"/14", disengageable, crankshaft front or rear end
- Auxiliary drive
- Extra pulley for crankshaft
- Hydraulic pump for steering and other duties

### Reverse gear

- MG516

### Other equipment

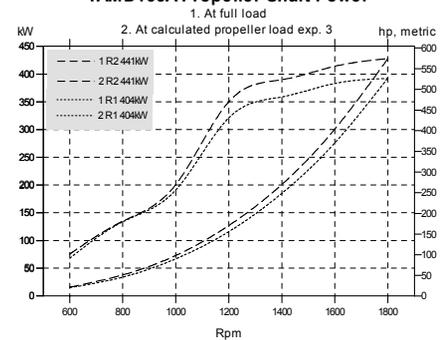
- 2" bilge/flush pump
- Belt guard
- White-painted engine and reverse gear
- Autostop equipment acc. to IP44
- Engine heater 2000 W, separately fitted

Contact your local Volvo Penta dealer for further information.

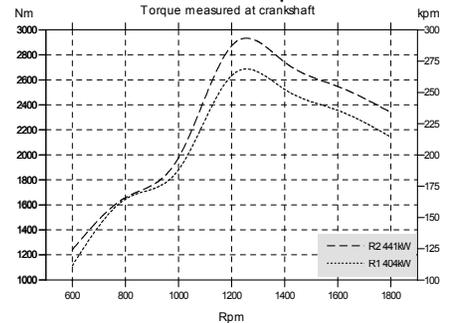
Not all models, standard equipment and accessories are available in all countries. All specifications are subject to change without notice.

The engine illustrated may not be entirely identical to production standard engines.

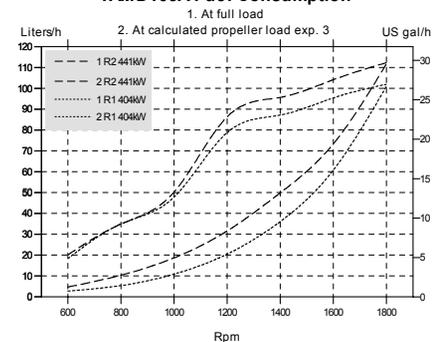
**TAMD165A Propeller Shaft Power**



**TAMD165A Torque**



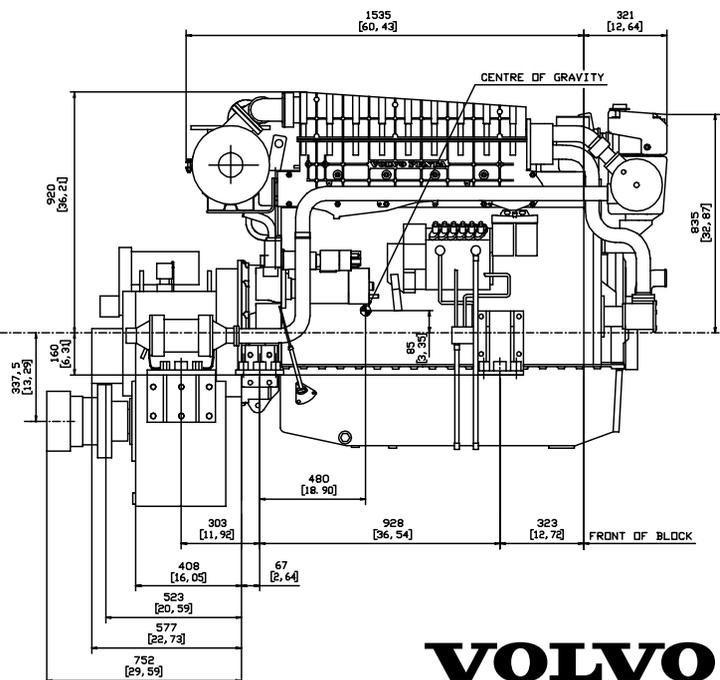
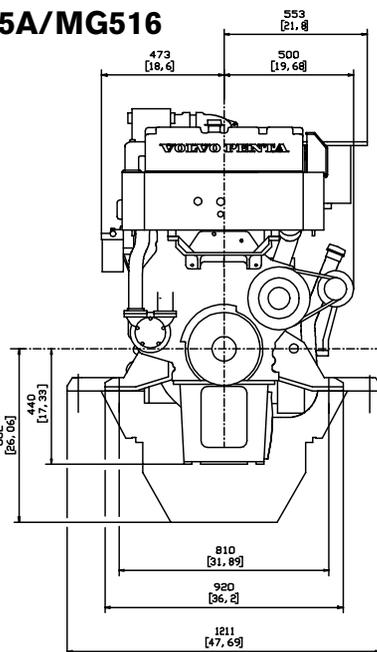
**TAMD165A Fuel Consumption**



## Dimensions

### TAMD165A/MG516

Not for installation.



# VOLVO PENTA

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